We Claim:

1. A poly-o-hydroxyamide having a formula I

$$A - \left(-M^{\frac{1}{2}}\right)_{a} \left(-M^{\frac{2}{2}}\right)_{b} \left(-M^{\frac{3}{2}}\right)_{c} \left(-M^{\frac{4}{2}}\right)_{d} \left(-M^{\frac{5}{2}}\right)_{e} \left(-M^{\frac{6}{2}}\right)_{f} A$$

Formula I

wherein

 M^1 is

 M^2 is

 M^3 , M^4 , and M^5 , in each case independently, are monomers selected from the group consisting of

$$\star - N - \frac{QR^{1}}{Z_{-}^{1}} N - C - Y^{2} - C - \star$$

$$*-x^{1}-C-y^{4}-C-*$$
, and

$$*-x^{2}C-y^{5}C-*$$

 M^6 is

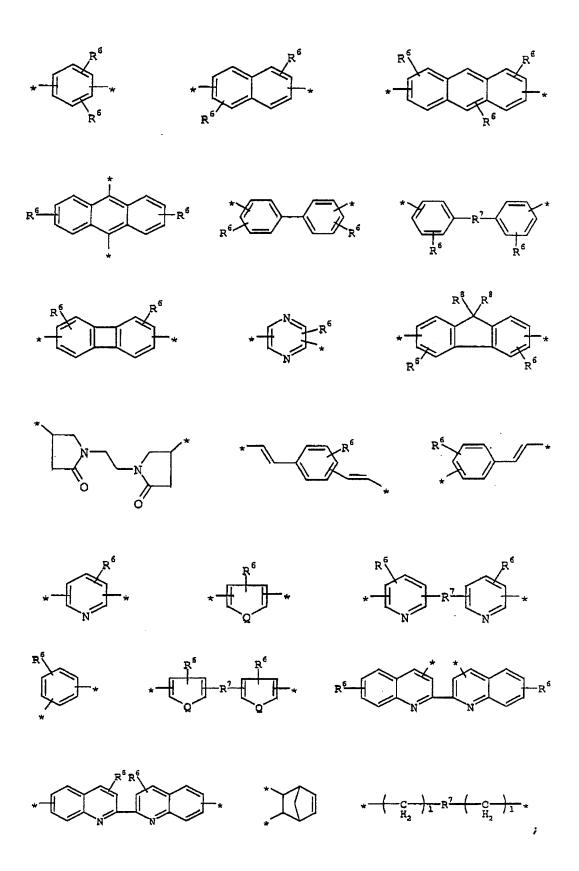
$$\star - \underset{\text{H}}{\overset{\text{OR}^{1}}{\underset{\text{I}}{\overset{\text{OR}^{1}}{\underset{\text{H}}{\overset{\text{OR}^{1}}{\underset{\text{OR}^{1}}{\overset{\text{OR}^{1}}{\underset{\text{OR}}{\overset{\text{OR}^{1}}{\underset{\text{OR}}{\overset{\text{OR}^{1}}{\underset{\text{OR}}{\overset{\text{OR}^{1}}{\underset{\text{OR}}{\overset{\text{OR}^{1}}{\underset{\text{OR}}{\overset{\text{OR}^{1}}{\underset{\text{OR}}{\overset{\text{OR}^{1}}{\underset{\text{OR}}{\overset{\text{OR}^{1}}{\underset{\text{OR}}{\overset{\text{OR}^{1}}{\underset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}{\underset{\text{OR}}{\overset{\text{OR}}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{\text{OR}}{\overset{O}}{\overset{\text{OR}}}{\overset{\text{OR}}{\overset{\text{OR}}}{\overset{\text{OR}}{\overset{O}}{\overset{\text{OR}}}}{\overset{O}}{\overset{O}}{\overset{O}}{\overset{O}}{\overset{O}}{\overset{O}}{\overset{O}}{\overset{O}}{\overset{O}}}{\overset{O}}{\overset{O}}{\overset{O}}{\overset{O}}}{\overset{O}}{\overset{O}}{\overset{O}}}{\overset{O}}{\overset{O}}{\overset{O}}}{\overset{O}}}{\overset{O}}{\overset{O}}{\overset{O}}}{\overset{O}}{\overset{O}}{\overset{O}}}{\overset{O}}{\overset{O}}}{\overset{O}}{\overset{O}}}{\overset{O}}{\overset{O}}{\overset{O}}}{\overset{O}}}{\overset{O}}}{\overset{O}}{\overset{O}}}{\overset{O}}}{\overset{O}}}{\overset{O}}{\overset{O}}}{\overset{O}}}{\overset{O}}}{\overset{O}}{\overset{O}}}{\overset{O}}}{\overset{O}}}{\overset{O}}{\overset{O}}}{\overset{O}}}{\overset{O}}{\overset{O}}{\overset{O}}}{\overset{O}}}{\overset{O}}{\overset{O}}}{\overset{O}}}{\overset{O}}}{\overset{O}}{\overset{O}}{\overset{O}}}{\overset{O}}}{\overset{O}}{\overset{O}}}{\overset{O}}}{\overset{O}}}{\overset{O}}}{\overset{O}}}{\overset{O}}}{$$

 Z^2 is a substituent selected from the group consisting of

-63-

 Z^1 and Z^3 , in each case independently, are substituents selected from the group stated for Z^2 , the group further consisting of

 Y^1 , Y^2 , Y^3 , Y^4 , and Y^5 are substituents selected from the group consisting of

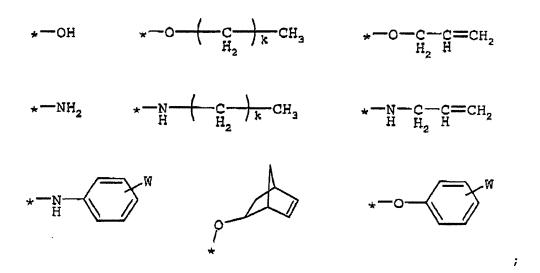


 \mathbf{X}^1 and \mathbf{X}^2 , in each case independently, are selected from the group consisting of:

T is a substituent selected from the group consisting of

A, if at least one of a=0 and f=1, is a substituent selected from the group consisting of

A, if at least one of a=1 and f=0, is a substituent selected from the group consisting of



W is a substituent selected from the group consisting of

$$\star - H \qquad \star - CN \qquad \star - CH_3 \qquad \star - CCH_3 \qquad \star - CH_3 \qquad \star - CH_2 \qquad \star$$

Q is a substituent selected from the group consisting of

 R^1 is a substituent selected from the group consisting of

 R^2 is a substituent selected from the group consisting of -H, an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

 R^3 and R^4 , in each case independently, are substituents selected from the group consisting of a substituted alkylene, an unsubstituted alkylene, arylene, and cycloalkylene group;

 ${\ensuremath{R}}^{5}$ is a substituent selected from the group consisting of

*—H *
$$\leftarrow C$$
 $\rightarrow C$ $\rightarrow C$

;

 R^6 is a substituent selected from the group consisting of -H, -CF3, -OH, -SH, -COOH, -N(R^2)2, an alkyl group, aryl group, a heteroaryl group, and

 R^7 is a substituent selected from the group consisting of -O-, -CO-, -NR^4-, -S-, -SO_2-, -CH_2-, -S_2-, and

R⁸ is a substituent selected from the group consisting of an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

a is an integer from 0 to 1;
b is an integer from 1 to 200;

```
c is an integer from 0 to 200;
d is an integer from 0 to 50;
e is an integer from 0 to 50;
f is an integer from 0 to 1;
g is an integer from 0 to 100;
h is an integer from 0 to 100;
i is an integer from 0 to 10;
k is an integer from 0 to 10;
l is an integer from 1 to 10;
m is an integer from 1 to 10;
```

g and h are not simultaneously 0; and

- 1 is an integer from 0 to 10 when R^7 is $-CH_2-$.
- 2. The poly-o-hydroxyamide according to claim 1, wherein b is an integer from 5 to 100.
- 3. The poly-o-hydroxyamide according to claim 1, wherein c is an integer from 0 to 50.
- 4. The poly-o-hydroxyamide according to claim 1, wherein d is an integer from 0 to 20.
- 5. The poly-o-hydroxyamide according to claim 1, wherein e is an integer from 0 to 20.

- 6. The poly-o-hydroxyamide according to claim 1, wherein at least one of c, d, and e is not equal to zero.
- 7. A polybenzoxazole obtained from a poly-o-hydroxyamide having a formula I

$$A - \left(-M^{\frac{1}{2}}\right)_{a} \left(-M^{\frac{2}{2}}\right)_{b} \left(-M^{\frac{3}{2}}\right)_{c} \left(-M^{\frac{4}{2}}\right)_{d} \left(-M^{\frac{6}{2}}\right)_{e} \left(-M^{\frac{6}{2}}\right)_{f} A$$

Formula I

wherein

 M^1 is

 M^2 is

$$*-N - \frac{CR^{1}}{R} - \frac{O}{R} - \frac{O}{R} - \frac{O}{R} + \frac{O}{R} - \frac{O}{R} + \frac{O}{R} - \frac{O}{R} - \frac{O}{R} + \frac{O}{R} - \frac{O$$

 ${\rm M}^3$, ${\rm M}^4$, and ${\rm M}^5$, in each case independently, are monomers selected from the group consisting of

$$\star - \underset{H}{\overset{QR^{1}}{\underset{||}{\overset{Q}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{|}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{||}{\overset{||}{\overset{}{\underset{||}{\overset{}{\underset{||}{\overset{|}{\underset{||}{\overset{|}{\underset{||}{\overset{|}{\underset{||}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{|}{\underset{|}}{\overset{|}{\underset{|}{\overset{|}{\underset{|}}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}{\overset{|}{\underset{|}}{\overset{|}{\underset{|}{\overset{|}{\underset{|}}{\overset{|}{\underset{|}}{\overset{|}{\underset{|}}{\overset{|}}{\underset{|}}{\overset{|}{\underset{|}}{\overset{|}{\underset{|}}{\overset{|}{\underset{|}}{\overset{|}}{\overset{|}{\underset{|}}{\overset{|}}{\underset{|}}{\overset{|}{\underset{|}}{\overset{|}}{\overset{|}{\underset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\underset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}{\underset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|}}{\overset{|$$

$$*-x^{1}-c^{0}-y^{4}-c^{-*}$$
, and

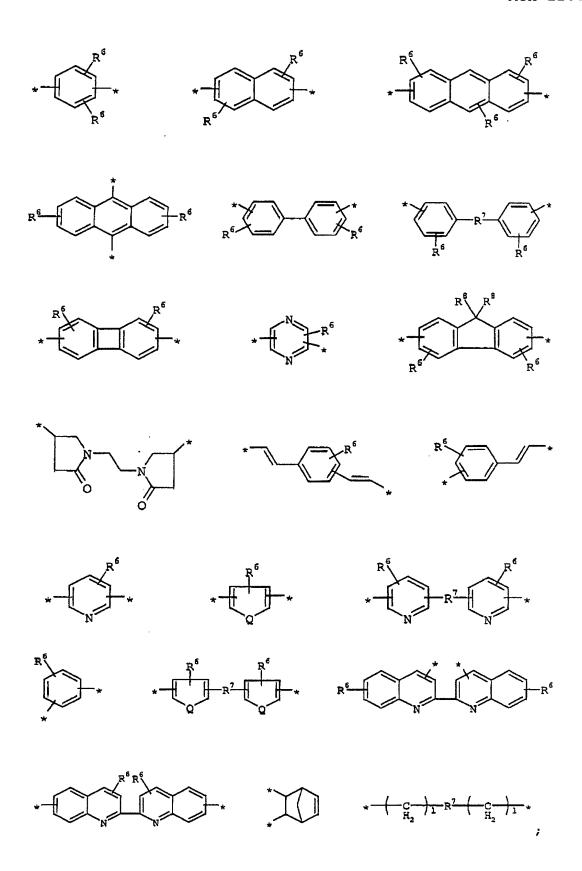
 M^6 is

 \mathbf{Z}^2 is a substituent selected from the group consisting of

-76-

 Z^1 and Z^3 , in each case independently, are substituents selected from the group stated for Z^2 , the group further consisting of

 Y^1 , Y^2 , Y^3 , Y^4 , and Y^5 are substituents selected from the group consisting of



 \mathbf{X}^1 and \mathbf{X}^2 , in each case independently, are substituents selected from the group consisting of:

*
$$-\frac{O}{C} - O - \frac{C}{C} - \frac{R^{3}}{H_{2}} - \frac{C}{H_{2}} - \frac{O}{g} - O - \frac{C}{C} - O - \frac{R^{4}}{H_{2}} - \frac{C}{H_{2}} - \frac{O}{h} + \frac{C}{H_{2}} - \frac{C}{H_{2}}$$

T is a substituent selected from the group consisting of

$$*-\frac{R^{2}}{C}$$
 $*-C-*$ $*-O-*$ $*-S-*$ $\frac{R^{2}}{N-*}$

A, if at least one of a=0 and f=1, is a substituent selected from the group consisting of

A , if at least one of a=1 and f=0, is a substituent selected from the group consisting of

*-OH *-O-
$$\frac{C}{H_2}$$
 CH₃ *-O- $\frac{C}{H_2}$ H=CH₂

*-NH₂ *-N- $\frac{C}{H_2}$ CH₃ *-N- $\frac{C}{H_2}$ CH₂

*-NH₂ +-N- $\frac{C}{H_2}$ CH₃ *-N- $\frac{C}{H_2}$ CH₂

*-N- $\frac{C}{H_2}$ CH₃ *-N- $\frac{C}{H_2}$ CH₂

W is a substituent selected from the group consisting of

Q is a substituent selected from the group consisting of

R1 is a substituent selected from the group consisting of

 R^2 is a substituent selected from the group consisting of -H, an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

 R^3 and R^4 , in each case independently, are substituents selected from the group consisting of a substituted alkylene, an unsubstituted alkylene, arylene, and cycloalkylene group;

R⁵ is a substituent selected from the group consisting of

*-H *
$$C_{H_2}$$
 CH₃ * CF_2 1 CF₃

*-C_{H_2}

 R^6 is a substituent selected from the group consisting of -H, -CF3, -OH, -SH, -COOH, -N(R^2)2, an alkyl group, aryl group, a heteroaryl group, and

$$*-C \equiv CH \qquad *-C = CH_2 \qquad *-C \equiv C \qquad \qquad *-Q - C - C = CH_2$$

$$*-Q - CH_2 \qquad *-Q - CH_3 \qquad *-Q - CH_2 \qquad *-Q - CH_2$$

 R^7 is a substituent selected from the group consisting of -O-, -CO-, -NR^4-, -S-, -SO_2-, -CH_2-, -S_2-, and

R⁸ is a substituent selected from the group consisting of an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

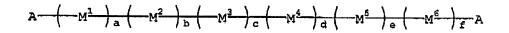
a is an integer from 0 to 1;
b is an integer from 1 to 200;

```
c is an integer from 0 to 200;
d is an integer from 0 to 50;
e is an integer from 0 to 50;
f is an integer from 0 to 1;
g is an integer from 0 to 100;
h is an integer from 0 to 100;
i is an integer from 0 to 10;
k is an integer from 0 to 10;
h is an integer from 1 to 10;
m is an integer from 1 to 10;
```

g and h are not simultaneously 0; and

l is an integer from 0 to 10 when $\ensuremath{\mbox{R}^{7}}$ is $-CH_{2}-$.

8. A process for preparing a poly-o-hydroxyamide having a formula I



Formula I

wherein

 M^1 is

 M^2 is

 ${\rm M}^3$, ${\rm M}^4$, and ${\rm M}^5$, in each case independently, are monomers selected from the group consisting of

$$*-x^{1}-C-y^{4}-C-*$$
 , and

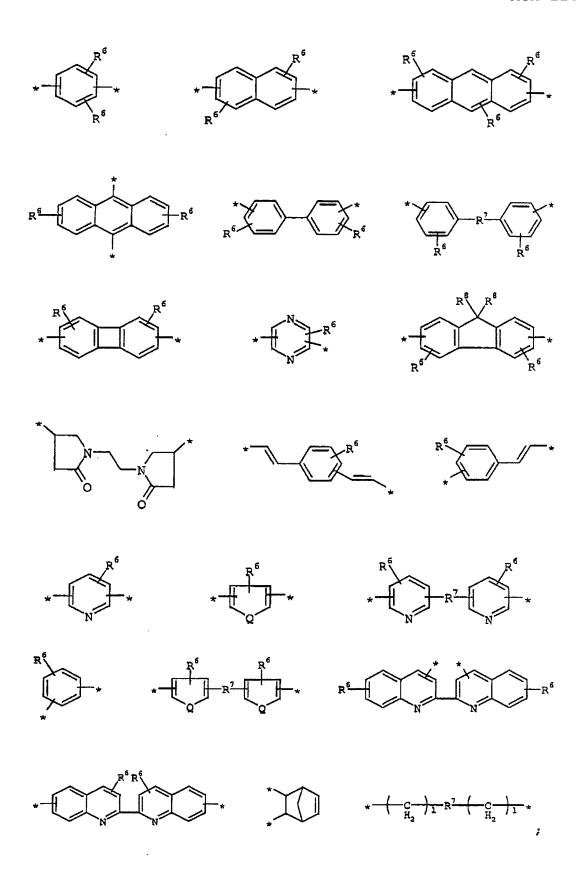
 $extsf{M}^6$ is

 $\ensuremath{\text{Z}^2}$ is a substituent selected from the group consisting of

-88-

 Z^1 and Z^3 , in each case independently, are substituents selected from the group stated for Z^2 , the group further consisting of

 Y^1 , Y^2 , Y^3 , Y^4 , and Y^5 are substituents selected from the group consisting of

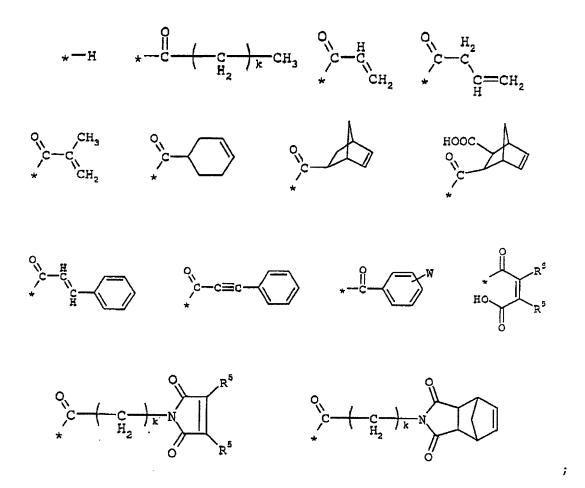


 \mathbf{X}^1 and \mathbf{X}^2 , in each case independently, are substituents selected from the group consisting of:

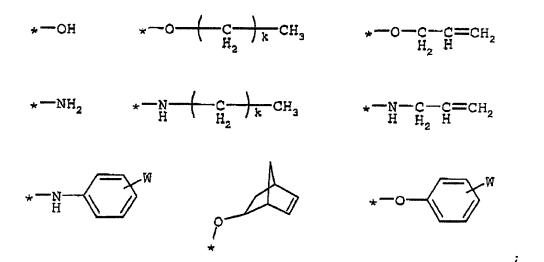
*
$$-\frac{0}{C} - O - \frac{C}{C} - \frac{R^{3}}{H_{2}} - \frac{C}{H_{2}} - \frac{O}{G} - O - \frac{C}{C} - O - \frac{R^{4}}{H_{2}} - \frac{C}{H_{2}} - \frac{C}{H_$$

T is a substituent selected from the group consisting of

A, if at least one of a=0 and f=1, is a substituent selected from the group consisting of



A, if at least one of a=1 and f=0, is a substituent selected from the group consisting of



W is a substituent selected from the group consisting of

Q is a substituent selected from the group consisting of

R1 is a substituent selected from the group consisting of

 R^2 is a substituent selected from the group consisting of -H, an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

 R^3 and R^4 , in each case independently, are substituents selected from the group consisting of a substituted alkylene, an unsubstituted alkylene, arylene, and cycloalkylene group;

 R^5 is a substituent selected from the group consisting of

*-H *
$$\leftarrow C$$
 $\leftarrow CF_2$ $\rightarrow CF_3$ $\leftarrow CF_2$ $\rightarrow CF_3$ $\leftarrow CF_2$ $\rightarrow CF_3$

 R^6 is a substituent selected from the group consisting of -H, -CF3, -OH, -SH, -COOH, -N(R^2)2, an alkyl group, aryl group, a heteroaryl group, and

$$*-C \equiv CH \qquad *-C = CH_2 \qquad *-C \equiv C \qquad \qquad *-Q - C - CH_2 \qquad *-Q - CH_2 - CH_2 \qquad *-Q - CH$$

 R^7 is a substituent selected from the group consisting of -O-, -CO-, -NR^4-, -S-, -SO_2-, -CH_2-, -S_2-, and

R⁸ is a substituent selected from the group consisting of an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

a is an integer from 0 to 1;
b is an integer from 1 to 200;

```
c is an integer from 0 to 200;
d is an integer from 0 to 50;
e is an integer from 0 to 50;
f is an integer from 0 to 1;
g is an integer from 0 to 100;
h is an integer from 0 to 100;
i is an integer from 0 to 10;
k is an integer from 0 to 10;
l is an integer from 1 to 10;
```

m is an integer from 1 to 10;

g and h are not simultaneously 0; and

1 is an integer from 0 to 10 when R⁷ is -CH₂-;

the method which comprises:

reacting a monomer having a formula II

Formula II,

Z corresponding to one of Z^1 , Z^2 , and Z^3 ,

with at least one of a dicarboxylic acid and an activated dicarboxylic acid derivative having a formula III

$$\sum_{\mathsf{C}} \mathsf{A} = \bigvee_{\mathsf{C}} \mathsf{A}$$

Formula III,

L being a substituent selected from the group consisting of a hydroxyl group and an activating group;

Y being one of Y^1 , Y^2 , Y^3 , Y^4 , and Y^5 .

- 9. The process according to claim 8, which further comprises including a base during the reacting step.
- 10. A process for preparing a polybenzoxazole, which comprises heating a poly-o-hydroxyamide having a formula I

$$A = \left(-M^{\frac{1}{2}}\right)_{a} \left(-M^{\frac{2}{2}}\right)_{b} \left(-M^{\frac{3}{2}}\right)_{c} \left(-M^{\frac{4}{2}}\right)_{d} \left(-M^{\frac{5}{2}}\right)_{e} \left(-M^{\frac{6}{2}}\right)_{f} A$$

Formula I

wherein

 M^1 is

 M^2 is

 ${\rm M}^3$, ${\rm M}^4$, and ${\rm M}^5$, in each case independently, are monomers selected from the group consisting of

$$*-x^{1}-C-y^{4}-C-*$$
, and

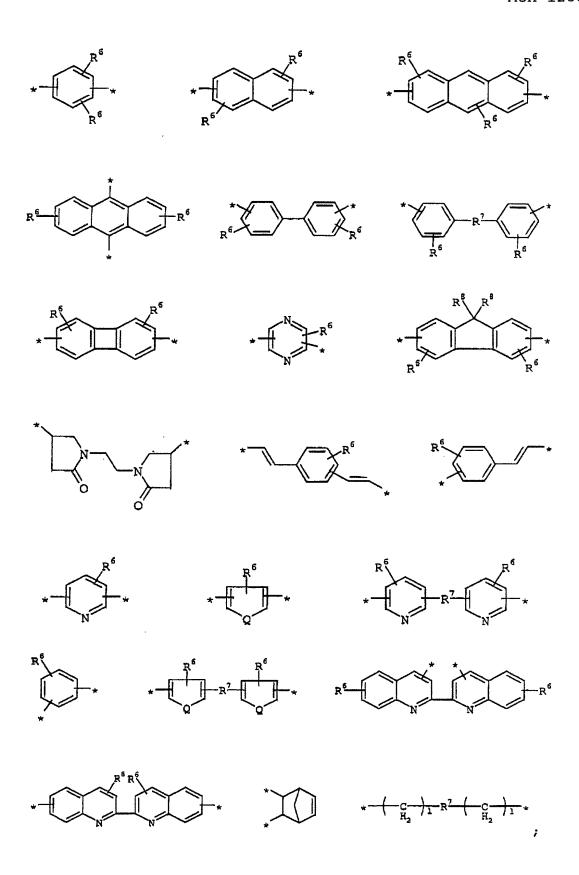
 M^6 is

 \mathbf{Z}^2 is a substituent selected from the group consisting of

-102-

 Z^1 and Z^3 , in each case independently, are substituents selected from the group stated for Z^2 , the group further consisting of

 $Y^1,\ Y^2,\ Y^3,\ Y^4,\ \text{and}\ Y^5$ are substituents selected from the group consisting of

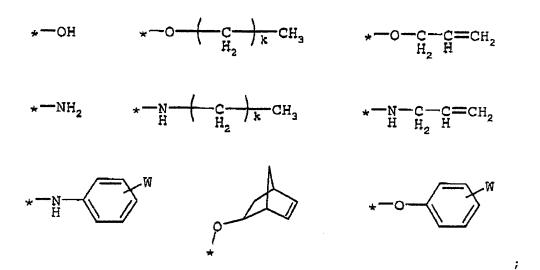


 \mathbf{X}^1 and \mathbf{X}^2 , in each case independently, are substituents selected from the group consisting of:

T is a substituent selected from the group consisting of

A, if at least one of a=0 and f=1, is a substituent selected from the group consisting of

A, if at least one of a=1 and f=0, is a substituent selected from the group consisting of



W is a substituent selected from the group consisting of

Q is a substituent selected from the group consisting of

 R^1 is a substituent selected from the group consisting of

 ${\mbox{R}}^2$ is a substituent selected from the group consisting of -H, an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

 R^3 and R^4 , in each case independently, are substituents selected from the group consisting of a substituted alkylene, an unsubstituted alkylene, arylene, and cycloalkylene group;

 R^5 is a substituent selected from the group consisting of

*—H *
$$\leftarrow C$$
 $\leftarrow CF_2$ $\rightarrow CF_3$ $\leftarrow CF_2$ $\rightarrow CF_3$ $\leftarrow CF_3$

 R^6 is a substituent selected from the group consisting of -H, -CF_3, -OH, -SH, -COOH, -N(R^2)_2, an alkyl group, aryl group, a heteroaryl group, and

$$*-C \equiv CH$$

$$*-C \equiv CH_{2}$$

$$*-C \equiv CH_{2}$$

$$*-Q = C = CH_{2}$$

$$*-Q = CH_{2}$$

$$*-Q$$

 R^7 is a substituent selected from the group consisting of -O-, -CO-, -NR^4-, -S-, -SO_2-, -CH_2-, -S_2-, and

 R^8 is a substituent selected from the group consisting of an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

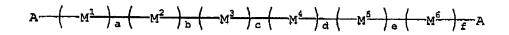
a is an integer from 0 to 1;
b is an integer from 1 to 200;

```
c is an integer from 0 to 200;
d is an integer from 0 to 50;
e is an integer from 0 to 50;
f is an integer from 0 to 1;
g is an integer from 0 to 100;
h is an integer from 0 to 100;
i is an integer from 0 to 10;
k is an integer from 0 to 10;
l is an integer from 1 to 10;
m is an integer from 1 to 10;
```

g and h are not simultaneously 0; and

- 1 is an integer from 0 to 10 when R^7 is $-CH_2-$.
- 11. An electronic component comprising a dielectric including a polybenzoxazole according to claim 7.
- 12. A process for producing an electronic component including a polybenzoxazole, which comprises:

preparing, in a solvent, a solution of a poly-o-hydroxyamide having a formula I



Formula I

wherein

 M^1 is

 M^2 is

$$*-N - Z - N - C - Y - C - *$$

$$* - N - Z - N - C - Y - C - *$$

 ${\rm M}^3$, ${\rm M}^4$, and ${\rm M}^5$, in each case independently, are monomers selected from the group consisting of

$$\star - \underset{H}{\overset{\bigcirc}{N}} - \underset{\overset{\bigcirc}{Z}_{1}}{\overset{\bigcirc}{\overset{}{N}}} \underset{H}{\overset{\bigcirc}{H}} - \underset{\overset{\bigcirc}{C}}{\overset{\bigcirc}{\overset{}{U}}} - \underset{\overset{\bigcirc}{Y}_{2}}{\overset{\bigcirc}{\overset{\bigcirc}{C}}} - \star$$

$$*-x^{1}-C-y^{4}-C-*$$
, and

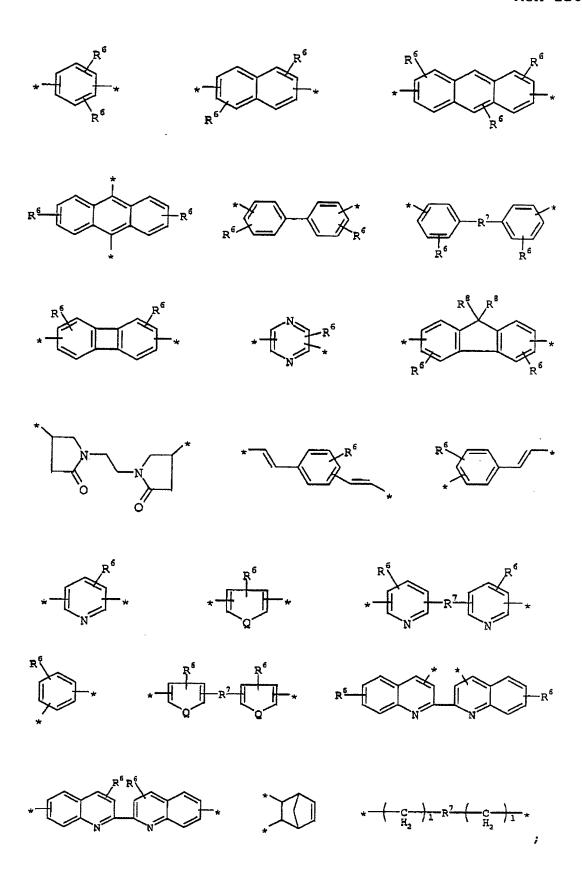
 M^6 is

 $\ensuremath{\text{Z}^2}$ is a substituent selected from the group consisting of

-115-

 Z^1 and $Z^3,$ in each case independently, are substituents selected from the group stated for $Z^2,$ the group further consisting of

 Y^1 , Y^2 , Y^3 , Y^4 , and Y^5 are substituents selected from the group consisting of



 \mathbf{X}^1 and \mathbf{X}^2 , in each case independently, are substituents selected from the group consisting of:

T is a substituent selected from the group consisting of

A, if at least one of a=0 and f=1, is a substituent selected from the group consisting of

A, if at least one of a=1 and f=0, is a substituent selected from the group consisting of

W is a substituent selected from the group consisting of

Q is a substituent selected from the group consisting of

 R^1 is a substituent selected from the group consisting of

 R^2 is a substituent selected from the group consisting of -H, an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

 R^3 and R^4 , in each case independently, are substituents selected from the group consisting of a substituted alkylene, an unsubstituted alkylene, arylene, and cycloalkylene group;

 ${\ensuremath{R}}^{5}$ is a substituent selected from the group consisting of

*-H *
$$\left(\begin{array}{c} C \\ H_2 \end{array} \right)_1 CH_3$$
 * $\left(\begin{array}{c} CF_2 \\ \end{array} \right)_1 CF_3$

 $\rm R^6$ is a substituent selected from the group consisting of -H, -CF3, -OH, -SH, -COOH, -N($\rm R^2)_2$, an alkyl group, aryl group, a heteroaryl group, and

$$*-C \equiv CH \qquad *-C = CH_2 \qquad *-C \equiv C \qquad \qquad *-Q - C - C = CH_2$$

$$*-Q - CH_2 \qquad *-Q - CH_3 \qquad 0 \qquad H_2$$

$$*-Q - CH_2 \qquad *-Q - CH_2 \qquad *-Q - CH_2 \qquad *-Q - CH_2$$

$$*-Q - CH_2 \qquad *-Q - CH_2 \qquad *-Q - CH_2 \qquad *-Q - CH_2$$

$$*-Q - CH_2 \qquad *-Q - CH_2 \qquad *$$

 R^7 is a substituent selected from the group consisting of -O-, -CO-, -NR^4-, -S-, -SO_2-, -CH_2-, -S_2-, and

 R^8 is a substituent selected from the group consisting of an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

a is an integer from 0 to 1;
b is an integer from 1 to 200;

```
c is an integer from 0 to 200;
d is an integer from 0 to 50;
e is an integer from 0 to 50;
f is an integer from 0 to 1;
q is an integer from 0 to 100;
h is an integer from 0 to 100;
i is an integer from 0 to 10;
k is an integer from 0 to 10;
l is an integer from 1 to 10;
m is an integer from 1 to 10;
g and h are not simultaneously 0; and
l is an integer from 0 to 10 when R<sup>7</sup> is -CH<sub>2</sub>-;
applying the solution to a substrate;
evaporating the solvent to form a film;
heating the film to cyclize the poly-o-hydroxyamide of the
formula I to give a polybenzoxazole according to claim 7;
structuring the film to obtain a resist structure having
trenches;
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depositing a conductive material on the resist structure to fill the trenches the conductive material; and

removing excess conductive material.

13. A process for producing an electronic component including a polybenzoxazole, which comprises:

preparing, in a solvent, a solution of a poly-o-hydroxyamide having a formula I

$$A = \left(-M^{\frac{1}{2}} \right)_{a} \left(-M^{\frac{2}{2}} \right)_{b} \left(-M^{\frac{3}{2}} \right)_{c} \left(-M^{\frac{4}{2}} \right)_{d} \left(-M^{\frac{6}{2}} \right)_{e} \left(-M^{\frac{6}{2}} \right)_{f} A$$

Formula I

wherein

 M^1 is

 M^2 is

 ${\rm M}^3$, ${\rm M}^4$, and ${\rm M}^5$, in each case independently, are monomers selected from the group consisting of

$$*- \underset{H}{\overset{\bigcirc}{N}} - \underset{\overset{\square}{Z} \underset{H}{\overset{1}{\overset{}{\sim}}} H}{\overset{\bigcirc}{N}} - \underset{C}{\overset{\bigcirc}{C}} - \underset{Y}{\overset{2}{\overset{}{\sim}}} \underset{C}{\overset{\bigcirc}{\cap}} - \underset{x}{\overset{}{\sim}}$$

$$*-x^{2}\overset{0}{=}-x^{5}\overset{0}{=}-x^{5}$$

 M^6 is

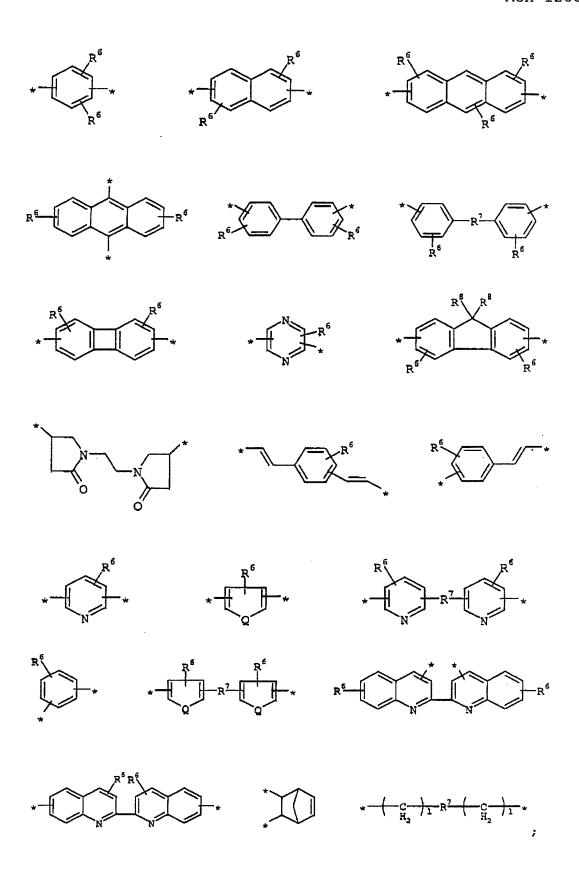
$$\star - \underset{\text{OR}^{1}}{\overset{\text{OR}^{1}}{\underset{\text{I}}{\longrightarrow}}} N - \star$$

 \mathbf{Z}^2 is a substituent selected from the group consisting of

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 Z^1 and Z^3 , in each case independently, are substituents selected from the group stated for Z^2 , the group further consisting of

 Y^1 , Y^2 , Y^3 , Y^4 , and Y^5 are substituents selected from the group consisting of



 \mathbf{X}^1 and \mathbf{X}^2 , in each case independently, are substituents selected from the group consisting of:

T is a substituent selected from the group consisting of

A, if at least one of a=0 and f=1, is a substituent selected from the group consisting of

A, if at least one of a=1 and f=0, is a substituent selected from the group consisting of

*-OH *-O-
$$\frac{C}{H_2}$$
 CH₃ *-O- $\frac{C}{H_2}$ CH₂

*-NH₂ *-N- $\frac{C}{H_2}$ CH₃ *-N- $\frac{C}{H_2}$ CH₂

*-NH₂ *-N- $\frac{C}{H_2}$ CH₃ *-N- $\frac{C}{H_2}$ CH₂

*-N- $\frac{C}{H_2}$ CH₃ *-N- $\frac{C}{H_2}$ CH₂

*-N- $\frac{C}{H_2}$ CH₃ *-N- $\frac{C}{H_2}$ CH₂

W is a substituent selected from the group consisting of

Q is a substituent selected from the group consisting of

 R^1 is a substituent selected from the group consisting of

 R^2 is a substituent selected from the group consisting of -H, an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

 R^3 and R^4 , in each case independently, are substituents selected from the group consisting of a substituted alkylene, an unsubstituted alkylene, arylene, and cycloalkylene group;

 ${\ensuremath{\mathtt{R}}}^{5}$ is a substituent selected from the group consisting of

*-H *-
$$C_{H_2}$$
 *- C_{H_3} *- C_{F_2} *- C_{F_3} *- C_{H_2}

 $\rm R^6$ is a substituent selected from the group consisting of -H, -CF_3, -OH, -SH, -COOH, -N(R^2)_2, an alkyl group, aryl group, a heteroaryl group, and

 R^7 is a substituent selected from the group consisting of -O-, -CO-, -NR^4-, -S-, -SO_2-, -CH_2-, -S_2-, and

R⁸ is a substituent selected from the group consisting of an alkyl group having from 1 to 10 carbon atoms, an aryl group, and a heteroaryl group;

a is an integer from 0 to 1;
b is an integer from 1 to 200;

```
c is an integer from 0 to 200;
d is an integer from 0 to 50;
e is an integer from 0 to 50;
f is an integer from 0 to 1;
g is an integer from 0 to 100;
h is an integer from 0 to 100;
i is an integer from 0 to 10;
k is an integer from 0 to 10;
l is an integer from 1 to 10;
m is an integer from 1 to 10;
```

g and h are not simultaneously 0; and

1 is an integer from 0 to 10 when R^7 is $-CH_2-$;

applying the solution to a substrate, the substrate having a surface with metallic structures and trenches between the metallic structures;

evaporating the solvent to fill the trenches with the poly-o-hydroxyamide having the formula I;

heating the substrate to cyclize the poly-o-hydroxyamide of the formula I to yield the polybenzoxazole according to claim 4.